

## 2019 Metrobank-MTAP-DepEd Math Challenge Oral Test Grade 5

### Category 1: 15 seconds per item

1. If  $x = 5 + 10 + 15 + 20 + 25$  and  $y = 13 + 14 + 15 + 16 + 17$ , what is  $x - y$ ? [ 0 ]
2. If  $\frac{a+b}{b} = \frac{11}{8}$ , what is the value of  $\frac{a}{b}$ ? [  $\frac{3}{8}$  ]
3. Express as decimal the sum of  $1 + \frac{1}{2} + \frac{1}{3} + \frac{1}{4} + \frac{1}{5} + \frac{1}{6}$ . [ 2.45 ]
4. If  $x : 8 = y : 32$  and  $x + y = 25$ , what is  $y - x$ ? [ 15 ]
5.  $S = 1 + 1^2 + 1^3 + 1^4 + 1^5 + 1^6$ . How many prime factors does  $S$  have? [ 2 ]
6. A bell sounds at the indicated number of times at regular intervals as follows:  
..., 8, 1, 9, 1, 10, 1, 11, 1, 12, 1, 1, 1, \_\_\_\_\_, \_\_\_\_\_, .....  
What are the next two numbers? [ 2, 1 ]
7. What is "one hundred thousand and one hundred thousandths" when written as a decimal number? [ 100 000.000 01 ]
8. If I add a number to 4 and subtract the same number from 5, the results differ by  $\frac{1}{2}$ . What is the number? [  $\frac{1}{4}$  or 0.25 ]
9. What is the greatest four-digit number that is divisible by 6? [ 9996 ]
10. What is the least 5-digit number with no zero digit that rounds off to 45 000? [ 44 511 ]
11. What is the greatest one-digit divisor of  $3 \times 4 \times 5 \times 6 \times 7 \times 8 \times 11 \times 13$ ? [ 9 ]

### Category 2: 30 seconds per item

1. Which is the least common multiple of 2, 3, 4, 6, 8, 24 and 60? [ 120 ]
2. The proper fractions  $\frac{n}{15}$ ,  $\frac{n}{16}$ , and  $\frac{n}{18}$  have the same numerator greater than 1 and are in simplest form. What is the least value of  $n$ ? [ 7 ]
3. The GCF and LCM of two numbers are 6 and 216, respectively. If one number is 24, what is the other number? [ 54 ]
4. What is  $(\frac{1}{3} + \frac{4}{9})$  expressed in percent without decimal? [  $77\frac{7}{9}\%$  ]
5. What is the value of  $n$  in the sequence 1, 3, 6, 10, 15,  $n$ ? [ 21 ]
6. What is the difference in the values of 8 and 6 in 456 789 123? [ 5 920 000 ]

**Category 3: 60 seconds per item**

1. What is exactly halfway between  $\frac{3}{5}$  and  $\frac{9}{10}$ ? [  $\frac{3}{4}$  ]
2. What is the last digit of the number  $2^{2020}$  when it is written in standard form? [ 6 ]
3. The average of 12 numbers is 80. If two numbers are discarded, namely 53 and 47, what is the average of the remaining numbers? [ 86 ]
4. The numbers 5 and 29 are the first and fifth terms of equally spaced sequence of five prime numbers. What are the other three numbers? [ 11, 17, 23 ]
5. What is  $n$  in  $n = 100 - 99 + 98 - 97 + 96 - 95 + 94 - 93 + 92 - 91 + \dots$  and so on up to  $\dots + 10 - 9 + 8 - 7 + 6 - 5 + 4 - 3 + 2 - 1$ ? [ 50 ]
6. The sum of the digits of the greatest possible three-digit even number is 26. If the number is multiplied by 1001, what is the product? [ 998 998 ]

**Clincher 1:** A coin bank is filled with 25-centavo coins amounting to 504.75 pesos. How many coins are there in all? [ 2 019 ]

**Clincher 2:** What is the value of  $(37\,037 \times 6) + (37\,037 \times 9) + (37\,037 \times 12)$ ? [ 999 999 ]

**Clincher 3:** The LCM of the number pair  $m$  and  $n$  is 12. Give a complete list of all possible pairs of  $m$  and  $n$ . [ 2 and 12; 3 and 4; 3 and 12; 4 and 6; 4 and 12; 6 and 12 ]

**Do or Die:** What is the product of  $\left(1 - \frac{1}{2}\right) \times \left(1 - \frac{1}{3}\right) \times \left(1 - \frac{1}{4}\right) \times \left(1 - \frac{1}{5}\right) \times \dots \times \left(1 - \frac{1}{99}\right) \times \left(1 - \frac{1}{100}\right)$  expressed as a fraction in simplest form? [  $\frac{1}{100}$  ]